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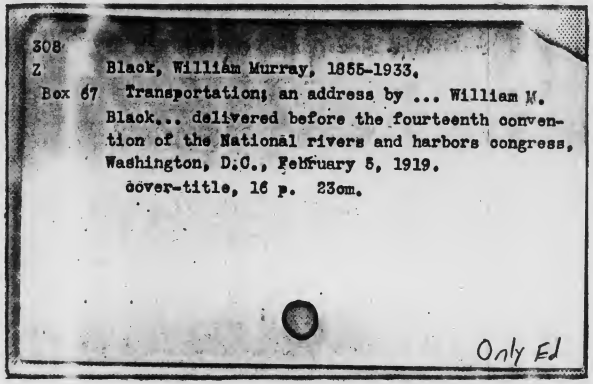

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TRANSPORTATION

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AN ADDRESS

BY

MAJ. GEN. WILLIAM M. BLACK
Chief of Engineers, U. S. Army

Delivered before the Fourteenth Convention of the
National Rivers and Harbors Congress
Washington, D. C., February 5, 1919

28 Feb., 1920, C.R.W.

TRANSPORTATION

AN ADDRESS

BY

Maj. Gen. William M. Black

Chief of Engineers, U. S. Army

Mr. Chairman, Ladies and Gentlemen:

On the transportation available depends the ability of our nation to secure for itself the maximum returns from the productivity of its wide spread domain. Each part of our broad land must make its contribution toward the general well-being and the sum of their contributions will attain a maximum value when each part of the land contributes that which it can produce best and most economically. Our conditions of living are a necessary result of our civilization and form of government. Things which for a very large class of people one hundred years ago were unattainable luxuries are now recognized as necessities, not because of softness or degeneracy but the reverse, because civilization has advanced, sharp demarkation lines between classes have been wiped out and a good standard of living is recognized as a necessity toward intelligent citizenship.

Unless ample means of transportation are available and each class of transportation is used fully for the work for which it is best fitted, the necessary distribution of our country's products cannot be made. Localities will have to be supplied locally. The general resources of the land cannot be availed of. Economic loss must result and this economic loss must be paid for in cash and in want.

It is, therefore, incumbent on us as a nation to see to it that all of our means of transportation are developed—and are used, each in co-ordination with the others so that the maximum, and therefore most economical, results will be secured.

The transportation agencies available may be classified broadly as follows:

1. Standard guage steam railways,
2. Water borne freight and passenger carriers,
3. Standard guage electric railways,
4. Self-propelled and animal-drawn highway vehicles.

Each class has its own advantages and limitations. Each of the first three are more or less dependent on each other and on the fourth class for collection and distribution of the articles carried. If the carriage alone of the freight is considered, the relative cost of transportation is in general in the order:

1. By water,
2. By steam railroad,
3. By electric railroad,
4. By motor truck.

Electric railway lines are as yet but little used for freight traffic in this country. Almost all freight transportation is either by water, by steam railways or over the highways and, if ton-mileage be considered, the amount carried by the railways vastly exceeds that carried by either of the other agencies. The cost to the public of transportation by water per ton-mile is about one-third the cost of the same carriage by rail which averages from six mills to one cent, although, due to the less direct route ordinarily followed by water carries, the discrepancy of cost between two points is much less than this, being roughly about eighty per cent of the cost of rail transportation, the cost of terminal transfers being included.

The cost of transportation by motor truck over the highways is in the neighborhood of twenty cents per ton-mile, so that this mode of transportation becomes most advantageous only for short hauls and where freight cannot be delivered direct from the rail and water carriers to the consumer.

If we consider the long distance carriers, the transportation agencies must be limited for the present to two only; that is, steam railways and water carriers. By the nature of the carrier, transportation by water must be limited to transfers between two points on the shores of the waterway. Any distribution from those points must be made by a carrier of another class. Railroads are free from this limitation and a railroad can theoretically extend its branches to each producer and consumer. Practically, this is imposible, so that we find collection and distribution for railway carriers must also be made by means of one of the other forms of carriers. Another disadvantage suffered by the railway carriers is the large amount of space required for main terminals, for the storage of cars, and for the composition and distribution of trains. Difficulties from this increase as the cities in which these terminals are usually situated increase in size, and the congestion of these terminals is a cause of great delays in rail

freight deliveries. So great is this disadvantage that the question of the removal of these terminals to greater distances from centers of collection and distribution is receiving serious consideration and the necessity of a closer co-ordination of rail and motor truck freight movement is constantly growing more pressing.

The mere statement of the desirabilty of a close co-ordination and co-working of all these agencies for the movement of freight, as a necessity for the general prosperity of the country, would seem to be all that is necessary to lead to a conviction of this need; yet these agencies are not co-ordinated today. It is known that for years past there has been destructive competition between the railway and the waterway carriers in which the railways have been so sucessful as to have driven their waterway competitors from the field in a great part of the United States, leaving the great highways formed by our navigable streams and canals almost unused.

The recent effort to increase transportation by water throughout our country, rendered a necessity by demands of the war which could not be fulfilled by the railways alone, has brought out more clearly than before the obstacles to this necessary co-ordination and has emphasized the need for the removal of these obstacles.

The railways have been a most potent factor in the development of this country. The necessity for their extension became evident as soon as experience had shown what they could do. Their construction involved the use of large amounts of capital. This necessitated that powerful companies be organized for their construction and operation and that rights of eminent domain be granted and rights for the use of certain territory, to an extent amounting to a virtual monopoly. These rights were promptly furnished. The companies formed for railway construction and operation reaped a well-deserved reward, so great that others promptly entered into this field of endeavor and found the people at large ready and willing to subscribe the necessary capital.

As is always the case under a stimulant of this kind, these companies were not always formed to fill an exhibited business need. Railways were built along disadvantageous routes simply because the more advantageous routes had already been occupied. Other lines were built in excess of the needs of transportation. At first no limitation was placed upon the railway transportation charges. These were limited in amount purely to "what the traffic would bear," and the only limitation on this was the competition

between the railways themselves and the competition with water carriers when such existed. Each railway company took whatever measures it deemed necesary to secure its own special prosperity with little regard to the general public interests, so that a remark attributed to a one-time president of a great railway corporation, "The public be damned," was believed by the people at large to be the general attitude of the so-called railway magnates. This era of railway speculation came to an end on account of the great financial losses involved, most particularly to the investors in railway stocks.

The railways themselves at first endeavored to stop this ruinous competition between themselves by a system of pooling. Later the Government, in answer to popular demands, undertook the partial regulation of railways and of rail rates. Finally, under the stress of war, the United States Government took over the control of the lines of the country and eliminated still other features resulting from the original uncontrolled ownership of and competition between the railroads. It now seems probable that, whether the railroads remain under a unified Government control or whether they revert again to their original companies, the reforms that have been made have come to stay. Can not these reforms be extended?

If the railroads be common carriers and are given privileges and rights for the benefit of the public, should not these common carriers be compelled to follow lines which will co-ordinate them fully with common carriers of other classes and bring about the utilization of all transportation agencies?

The ultimate cost to the shipper will be the controlling factor of the agency to be used for shipments. It is, therefore, manifest that the prime requisite for the co-ordination of the various agencies shall be that transportation rates charged shall be based on the cost of the service rendered. In no other way can the advantages and disadvantages of each agency be weighed and real co-ordination be assured. Further, in no other way can be secured the desideratum that transportation in general is carried on most economically. It is notorious that the existing system of railroad freight rates is not based on this principle—the cost of service rendered being in some cases greater and in some cases less than the rate. It is further notorious that at the present time the classification of the freight itself, on which is based the charges for carrying any given commodity by rail, bears little relation to this principle. It is understood that one of the reforms

being effected by the present Railroad Administration is a revisal of these classification schedules toward a proper basis, but as yet, insofar as known, no move has been made for such a revision of the freight rates as will base these rates on the cost of the service.

The railroad freight rates of today are still based on other principles. The old rule of "what the traffic will bear" was a simple relic from the days of unregulated monoply. Let us see what statements are made in defense of the existing system of rates. I will quote from "A History of Inland Transport and Communication in England," by Edwin A. Pratt, published in 1912, in which the well known arguments used in this country as well as in England are summarized. Arguing against any change in the basis for freight rates and speaking first concerning charges on a mileage basis, the author states:

> One effect of such a principle of rate-fixing as this would have been to exclude the long-distance trader from any particular market and to confer an undue advantage on the trader in the immediate neighborhood, or at a short distance therefrom, who would thus have gained a monopoly of the market, to the disadvantage of other traders and of the local community. Nor would such a system of rate-making have answered for the railway companies themselves, since the discouragement of long-distance traffic would have restricted the area of business, and limited their sources of revenue.
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> Another once much-favored theory is that the railway should charge so much for cost of service, plus a reasonable profit for themselves. Here, in the first place, there is the impossibility of deciding what is the cost of the service rendered in regard to each commodity and each consignment thereof that is carried. No basis exists on which the most expert of railway men could decide the respective costs of transport for each and every article in a trainload of miscellaneous goods, nor could any one apportion the exact amount that each should bear in regard to interest on capital outlay and other standing charges which must needs be covered, as well as the proportionate cost of actual operation.
>
> Then we have the fact that, even if these figures could be arrived at, many of the commodities carried would be unable to pay the rates fixed thereon. This would especially apply to coal, iron-stone, manure and other things either of low value or of considerable weight or bulk. Whatever may be the real cost of carrying them, commodities of this kind cannot pay more than a certain rate. If that rate is exceeded either they will be sent in proportionately smaller quantities or they will not be sent by rail at all.

He continues:

> We arrive, in this way, by the logic of actual facts, at the fundamental principle, adopted by railway companies, of charging "what the traffic will bear"; and by this is meant "charging no more than," rather than "charging as much as" the traffic will bear. Findlay, in his book on "The Working and Management of an English Railway" (fourth edition, 1891), says of the practice based on this principle:—
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> > "The rates are governed by the nature and extent of the traffic, the pressure of competition, either by water, by a rival route, or by other land carriage; but, above all, the companies have regard to the commercial value of the commodity, and the rate it will bear, so as to admit of its being produced and sold in a competing market with a fair margin of profit. The companies each do their best to meet the circumstances of the trade, to develop the resources of their own particular district, and to encourage the competition of markets, primarily, no doubt, in their own interests, but nevertheless greatly to the advantage of the community."
>
> The application of the principle is worked out by the division into various classes of all minerals and merchandise carried on the railway.
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> * * * * * * *
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> It is further to be remembered that although a good deal of raw material is carried in the lowest classes at rates which might work out at less than "cost" price, when every item in respect to "cost of service" and interest on capital expenditure had been allowed for, the commodities in question may reappear in various successive forms as part-manufactured or, eventually, as manufactured, articles, paying a successively higher rate, in accordance with their progressively greater value, on the occasion of each further transportation. Even when these results do not follow, the commodities carried at these low rates may help to develop the resources, or to expand the population, of a particular district, and thus serve to create traffic in other directions.
>
> While, also, the rates for the low-value articles may not cover every item in the so-called cost of service, they do contribute to the revenue an amount which might otherwise have to be made good by the fixing of higher rates on goods in other classes. Traders dealing in commodities of the latter type do not themselves lose by the fact that minerals, raw materials, or other things are carried at rates which, although exceptionally low, are the most they can be expected to pay. No injustice is done to them because the other classes of traders concerned get lower rates than they do themselves. They may even gain—directly, because they are saved from having to cover a larger proportion of the total railway expenditure; and indirectly, because the help given to those other lines of business may either bring trade to them or else keep down the cost of production in regard to manufactured articles they deal in or which they themselves require.
>
> The principle of charging "what the traffic will bear" does more than govern the rates as applying to visible traffic. It embraces the further principle of what Hadley, in his "Railroad Transportation," calls "the system of making rates to develop business."
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> * * * * * * *
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> In some instances group rates are in operation for a series of producing centres or for a series of ports, the rates being common to all the places or ports included in the group. This arrangement is of advantage to the general body of the traders concerned, since it puts them all on a footing of equality, without reference to differences in distance; and it is, also, of benefit to the railway companies since it simplifies the clerical work and helps further to avoid unremunerative competition.

This is all fallacious. The natural laws of supply and demand will insure a full distribution of products without the aid of agencies whose aim is not philanthropy. If an article is needed it must be had and its cost must be met. If it is not needed, it should not be supplied. Why should any corporation of private individuals be permitted to regulate commerce by regulating what articles shall or shall not be available? How does this become a function of a common carrier? It is the duty of the directors of a railway corporation, as trustees of the stockholders, to see to it, as far as lies in their power, that the total net revenues are in amount equal to the expenses of operation and maintenance plus a fair interest on the money invested. To do this they must make a fair charge for the services they render.

One rate of charge to one man and another rate of charge to another man for the same amount of service is unfair. This is taxation. One man is overcharged in order that another may be rendered more prosperous. It is the same for communities. Why should one community be favored by railways more than another? What right has any set of private individuals to use powers granted by the people at large in an endeavor artificially to offset natural advantages of location? If one locality has such natural advantages that its earning possibilities are greater than another, why should it not enjoy them? There, again, natural laws will restore equilibrium. Production will be regulated by the needs

of the people, and being so regulated will not be subject to over-stimulation at times and starved out at others by the establishment or change of artificial conditions. The history of our country and of the world at large shows that when business is based on artificial conditions it is always precarious, always subject to panics or over-stimulation.

The contention that it is impossible to decide the cost of the service rendered is a reflection on the intelligence of railway operators. If freight classification be based on the care necessary for the safe carriage of goods and the kind of equipment required for their transportation, the application of modern methods of analysis and cost keeping will readily determine cost of the service for each class, or at least a practicable and reasonable approximation to such cost.

The further argument that certain classes of materials could not be caried at remunerative rates is also unsound. What commodity is of so little real value that to be used it must be offered at less than cost? Trade necessities always are met.

Then again another basis for the fixing of freight rates is that the rates shall be lower to points where there is water competition. In other words, therefore, if the rates to such points be fair for the cost of service rendered, the rates to points not having this water competition must be unfairly high; or, if the rates to points having water competition are less than the cost of the service rendered—always including in this phrase "a fair profit to the investors"—then the deficiency must be made up by higher rates to the interior points.

The whole proceeding appears to me entirely contrary to our conception of the ideas of government. If rates be made low to a certain point and the deficiency in revenues then made up by higher rates to other points, the railroad company is developing the favored points at the expense of the remainder of the community. In other words the railway is taxing one set of communities for the benefit of another set of communities. It is exercising a right of taxation which, in all free governments, has been delegated by the people only to their duly elected representatives. Further than that, if the railways are developing manufacturing and other interests of certain sections of the country at the expense of similar interests in other sections, then again they are exercising powers only intended to be vested in the duly elected representatives of the people.

The system is a distinctly selfish one, devised simply for the greater prosperity of the railroads and involves the exercise of powers and of functions which have nothing to do with the fundamental reason for which the railroads exist, that is, as carriers of goods. The development of the country and the fostering of manufactures is proper, but when paid for by the general public this should be done by the authority of the people exercised through their duly elected representatives. The railroads should be compelled to adhere to their function as carriers and to cease the exercise of the prerogatives of sovereignty.

As a result of this fundamentally unlawful exercise of power in fixing rates, internal water competition has been eliminated. Only the other day an appeal was made to the Railroad Administration against one of its own acts by means of which car loads of coal placed in Cincinnati and bound for Indianapolis over the same road were charged different amounts for the haul between the two cities, those cars which had arrived at the first city by an all-rail route having to pay a less proportionate rate than those cars whose contents had arrived at the first city by water, even though the shipper by water had borne the costs of transfer and switching preliminary to placing the cars in the railroad yard. Is there any justice in such a proceeding, or is there any possibility of an economical development of transportation for this country while such proceedings are possible? By methods such as this, since the bulk of the freight must be caried by rail, competition by all other agencies will be eliminated and the public will pay the cost caused by the exclusive use of the more expensive method of transportation.

Zone rates and disproportionately high local freight rates are also methods of favoring certain communities and of eliminating water competition. With these methods in practical operation on the railroads, it was impracticable to ship freight by water to destinations involving a local rail haul. Consequently water carriers generaly are limited in their operations to transfers between river points and any saving possible by using in part the water route is lost. Do not misunderstand me—I am not a special pleader for water transportation—excepting where water transportation will prove most economical for the nation. Where water carriage is rendered impossible by artificial obstacles, such as an arbitrary system of freight rates, those obstacles should be

removed. Where, under a fair system of rates based on the cost of service rendered for each transportation agency, all rail transportation is cheapest, that class of transportation should be used.

Is the practical elimination of water carriers from our inland transportation agencies altogether the fault of the railways? It is not. Compare pictures of Mississippi River packets and terminals of today and those of fifty years ago. They seem of the same date, and in general are so, insofar as affects economical transportation. With these compare the railway equipment of today and that of fifty years ago. Note the vast improvement in every feature. The railways have progressed—the water carriers have stood still. Compare also the regularity and reliability of the railway freight service with the haphazard methods of many of our water carriers. Is there any good reason why merchants should not prefer to ship by rail? Happily all water carriers are not in this class. The service on the Great Lakes is a notable example of a well conducted and well patronized business. Steamboat service on the Hudson and on Long Island Sound has also been reliable and has flourished. So with other lines. The barge service recently inaugurated on the lower Mississippi is now showing that regular and reliable service can be established there. To be successful, water transportation must be organized and operated as efficiently as are the railways.

And waterways have one great advantage over the rail. Boats are not confined to a fixed track and, therefore, over any given route there is no necessity for a monopoly of transportation management. Over the same water route can ply the boats of a great company and also the boat whose stock owners, directorate, managers, and operators all are sheltered by the same cap, the wearer of which is the acquaintance and friend of all of his patrons. For a single road I am arguing for a rail rate, based on cost of transportation; for two roads covering the same territory, based on the cost of the easier haul; for the immutable laws of trade must govern in railroad as in other business. I am asking that water carriers receive fair and equal treatment by the railroads. I am told that if this were accorded, there are routes where the railways would be given no traffic, because since the railway charges must cover the interest on the cost of railway construction as well as of operation, and the water carriers have their routes made and maintained at public expense, the boats would have such an advantage that the railways would have

to be abandoned. There is justice in this contention especially in the case of canals and of canalized and regulated rivers. How can this be met?

It is known that new trade routes are hard to establish. Shippers are very conservative. Indeed many men are today clamoring for water transportation who do not have any intention of shipping their own goods by water, but who want the benefit of water competition in the hope of thereby effecting a lowering of rail rates. It is known that a railway line must be operated at a loss for some years (placed by some at 8 or 10) before a paying traffic is established. It is further known that the first transcontinental lines to the Pacific could not have been built without the aid of a government subsidy and even then most of them had to be reorganized on account of financial difficulties. The subsidy was given; the roads were built; and the results show the wisdom of that development work of the government. Cannot the improvement of our waterways and harbors be considered as the same class of development work? If this be so, should not provision be made for an ultimate return to the whole country for increased prosperity produced in a section at the expense of all? I think that this can be done.

Just as the public good demanded that for the better protection of shippers by rail, the railways should be regulated, their operation supervised and their rates fixed, so if the inland water transportation of the country is to become a great factor for prosperity, its carriers should be supervised, proper service should be compelled and the rates fixed. Inasmuch as the operation of water transportation is inherently less expensive than rail, and further, inasmuch as shippers have yet to learn that water transportation can be as reliable and practically as fast as, or in some cases faster than rail, and a prejudice against water carriage exists, a differential rate should be fixed for water routes less than the rates by rail. When the public funds have been and have to be used for the formation and maintenance of a water route, just as soon as the volume of water transportation attains such proportions that the boat revenues pay more than a fair return to the owners, then some of the excess can be returned to the people as tolls or taxes.

Little has been said about electric railways as freight carriers. As yet they have been comparatively little used for this purpose, although several lines are in successful operation. In answer to a query, the manager of one of these lines stated that the line did

a large and successful local business, but did not interchange freight with the steam railways. The manager of another electric line reports successful operations including the interchange of freight. The freight revenue per ton-mile of the latter road is about 8 cents. As feeders and distributors for long distance carriers such roads will form an important and as yet undeveloped part of the general transportation system.

Gentlemen, let us insist on a change. Let us demand that common carriers be restricted to their duty as common carriers; that the freight rates be based scientifically on the cost of service and that all agencies be co-ordinated and made to have proper arrangements for the interchange of traffic. But let us be fair. Let us subject all common carriers to equal treatment, having such regard for the peculiar conditions pertaining to each class as to make no regulations which will impose an undue burden on any. Transportation is a public necessity. To develop it and to operate it large powers must be granted and large sums of money expended, all of which must come from the people at large.

Then let us see to it that the powers are rightfully used and that the expenditures are justified by proper service; that any route to be developed, railway, waterway or highway, shall be worthy of development and when developed be used for the public service at rates which can be defended as representing the cost of the service rendered. Let the Federal Agency be truly an Interstate Commerce Agency and not simply a regulator of railways.

We have just passed through a war in which autocracy and democracy were the opponents. Despite the wonderful machine efficiency developed under autocracy, democracy has won, but at a terrible cost Men brought up under free institutions have proved themselves better than the individually undeveloped autocratic tools. But can we not learn a lesson from the war? Is there not a golden mean between the unthinking machine developed under autocracy and the extreme individualism of democracy? Have we not had proof of the necessity for concerted action where great public issues are involved? Is not the broad question of transportation such an issue? Must we not deal with it as a public question and not one for the unregulated and unsupervised activity of individuals whose primary motive will be self interest? Is not the entire question worthy of study on broad lines with a single objective in view—the welfare of the nation?

Transportation forms a fundamental part of the foundation on which the business of the country is supported. If this foundation be firm and secure the superstructure may be shaken at times but is in no danger of destruction. If, however, the foundation be not secure but is supported by temporary props which require constant attention and repair, business itself is rendered insecure and there being a possibility of destruction, a panicky feeling at least is developed whenever any slight disturbance is felt. A system of freight rates resting on an arbitrary and artificial basis is such a prop. The constant calls for the intervention of the Interstate Commerce Commission show this. Changes in freight rates are of constant occurrence. Communities considering themselves prejudiced by a ruling agitate for a change—opposition is made by other communities and the railways and the commercial centres are in a continuous state of turmoil.

If the rates were based on a fixed principle, such as that of cost of service rendered, once the cost is proved the question will soon adjust itself. If the operating costs increase, rates must be increased. If the operating costs become smaller the rates must be lowered. The condition of railway finances for the past few years, and the constant efforts to obtain an increase of rates to meet a diminishing net revenue, shows also that the present basis for that revenue is not so clearly justified as to permit of irrefutable proof. If our internal waterway commerce amounted to enough to form a large factor in business prosperity, the same conditions would be found there. Last summer notably in one waterway system, Chesapeake Bay and its tributaries, trouble existed. There, however, water carriers, not being subject to regulations, had their own way, and water transportation simply diminished, and this at a time when, due to the stress of war, all transportation agencies should have been working to their limit.

To insure the full benefits of transportation, all agencies must be worked together; to secure this there must be the same basis for charges for service for all; and to obtain a basis free from question the charges must be based on the cost of the service rendered.

Such a change must be made only after a close study of all conditions. All kinds of arguments will be raised for and against it. But a proper basis can be reached if always the fundamental principle be kept in view, that common carriers exist solely for the purpose of transportation, and that they exist solely for the benefit

of the entire country. Individual interests may suffer temporarily by the change, but individual interests should be held of light consideration in comparison with the permanent good of the nation.

The railroad administration is making an honest effort to help transportation in general. The former and the present Director General of Railways have been working vigorously to bring about a revival of water transportation. But the United States Railroad Administration is a railroad administration with a waterway appendix. Almost all of the officials have been officials of railroad corporations, trained in the railroad viewpoint. This makes their situation difficult when the question arises of building up what they have always considered a rival. Should we not have a Department of Transportation, charged with the development and co-ordination of all of the transportation agencies of the nation and empowered to make such regulations and changes in existing conditions as a careful study may show necessary? The necessity for railway, waterway and highway development—all should come within its activities. The task of such a Department would be arduous, and time will be required to determine the steps necessary and the means for carrying them into execution. Is it not high time that the work is started? Should not this convention work toward this end?

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